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DE PLANTIS TOXICARIIS E MUNDO NOVO TROPICALE COMMENTATIONES XXX

BIODYNAMIC GUTTIFEROUS PLANTS OF THE NORTHWEST AMAZON

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Plants with latex or resins seem to be accorded a special consideration as medicinals among the Indians of the northwest Amazon. Representatives of the Guttiferae appear to be repeatedly pointed out as therapeutic plants, the primary applications often being associated with their latex or resin content.

The following species were indicated as having medicinal or toxic use by Indians of the northwest Amazon during my fourteen years of field work in this area.

The species of Clusia and several other genera have been identified by Dr. Bassett Maguire of the New York Botanical Garden. The collections cited below are preserved in the Economic Herbarium of Oakes Ames or in the Gray Herbarium, both at Harvard University, the New York Botanical Garden and/or the Herbário Nacional in Bogotá. The genera are arranged alphabetically.

Caraipa laxiflora *Bentham* in Hooker, Lond. Journ. Bot. 2 (1843) 364.

BRAZIL: Estado do Amazonas, Middle Rio Negro, between the mouth of Rio Curicuriari and Barcellos, Vista Alegre. September 26–October 14, 1947. *Schultes et López 8867.*
COLOMBIA: Comisaria del Vaupés, Río Apaporis, Raudal Yayacopi. "Small tree, 10–12 feet. Fruit brown." February 15, 1952. *Schultes et Cabrera 15363.*

The Puinave Indians of Colombia know this plant as *kar-pat'*; the Kubuyari as *ma-wan-he-te*. The Indians of the middle Río Apaporis basin apply the sap to cure fungal diseases of the skin.

Caraipa parvielliptica *Cuatrecasas* in Rev. Acad. Col. Cienc. 8, no. 29 (1950) 64.

COLOMBIA: Comisaria del Vaupés, Río Kananarí, Cerro Isibukuri. "Bush along rill." April 12, 1951. *Schultes et Cabrera 14738.*—Río Miritiparaná. August 5, 1952. *Schultes et Cabrera 16460.*

Comisaria del Amazonas, Río Apaporis, Soratama. March 26, 1952. *Schultes et Cabrera 16070.*

The crushed leaves of *Caraipa parvielliptica* are rubbed vigorously on irritated skin for relief from itching among the Taiwano Indians.

A similar use is made of *Caraipa grandifolia* Mart. in the Brazilian Amazon, where the sap is considered to be an excellent treatment for "herpes, mange and itching" [LeCointe: *A Amazonia Brasileira* (1934) 424].

Clusia amazonica *Planchon et Triana* in Ann. Sci. Nat., ser. 4, 13 (1860) 358.

COLOMBIA: Comisaria del Amazonas, Río Apaporis, Soratama. "Strangler. Fruit ripens black-purple. No latex. Flood-bank." June 26, 1951. *Schultes et Cabrera 12834.*—Río Miritiparaná, Caño Guapayá. "Scandent shrub, extensive, fruit yellow but reddening from base to tip. No latex in stem. Latex of peduncle white." May 8, 1952. *Schultes et Cabrera 16386.*—Río Amazonas near mouth of Río Loretoyacu. "Scandent epiphyte. Flowers orange-white." September 13–15, 1966. *Schultes, Raffauf et Soejarto 24143.*

Comisaria del Vaupés, Río Apaporis, Jinogojé. "On savannah. Parasitic. July 7, 1951. *Schultes et Cabrera 12966.*—Same locality." Vine. Fruit ripening red. Latex watery. June 20, 1952. *Schultes et Cabrera 16765.*

The Makuna call this vine *ree-ka-ne-to-ma;* the Puinave know it as *pap-ka'*; in Yukuna, the name is *ka-hee-wa'-ka.* The fruits, boiled in water, yield a tea which is considered to be an excellent diuretic.

Clusia chiribiquetensis *Maguire ex R. E. Schultes* in Bot. Mus. Leafl., Harvard Univ. 15 (1951) 56, t. 18.

COLOMBIA: Comisaria del Vaupés, Río Macaya, Cerro Chiribiquete. January 1944. *Gutiérrez et Schultes 677.*—Same locality and date. "Bush 7–8 feet tall." *Gutiérrez et Schultes 679.*—Same locality. "Large, scraggly shrub 10 feet high; latex yellow, sticky; flowers white; sepals red-purple." May 15–16, 1943. *Schultes 5473.*—Same locality. July 24, 1943. *Schultes 5623.*

Among the Karijonas of the upper Vaupés, *Clusia chiribiquetensis* is reported as an effective antifungal agent: the fleshy, resinous leaves are crushed and applied to raw sores on the legs and feet that seem to be primarily of fungal origin. The plant is known by the Karijona name *ta-te'-pe-ka-me.*

Clusia columnaris *Engler ex Martius,* Fl. Bras. 12, pt. 1 (1888) 432.

COLOMBIA: Comisaria del Vaupés, Río Apaporis, Cachivera de Jirijirimo. "Small tree, 10 feet tall. Flowers white. Latex white. Basal half of petals deep purple-maroon. Fragrant. June 11, 1951. *Schultes 12360.*—Same locality. September 16, 1951. *Schultes et Cabrera 14000, 14015, 14037, 14061, 14085.*—Same locality. January 21, 1952. *Schultes et Cabrera 14966.*—Río Vaupés, Mitú and vicinity. September 7, 1951. *Schultes et Cabrera 138951;*—Río Kuduyarí, Cerro de Yapobodá. October 5, 1951. *Schultes et Cabrera 14245, 14371.*—Río Piraparaná, Raudal Na-hoo'-gaw-he. "Large tree on rocks. Latex white. Flowers white, centre reddish purple." August 30, 1952. *Schultes et Cabrera 17099.*—Río Kubiyú, Cerro de Kañendá. November 10, 1952. *Schultes et Cabrera 18312, 18373.*

Comisaria del Amazonas, Río Caquetá, La Pedrera. "Fruit red." April 1944. *Schultes 5865.*—Río Apaporis, Soratama. August 16, 1951. *Schultes et Cabrera 13586.*

Among many Indians of the Vaupés, the juice or latex of this very abundant treelet is employed to relieve toothache.

The Barasana Indians call this tree *dee-ka'-da* or *nee-ka'-da;* the Kubeos know it as *be-bam;* the Makús of the Río Piraparaná refer to it as *ree-ka-re-to-mee-see-ma-ma* ("vine that covers the flowers").

Clusia columnaris *Engler* var. **vaupesana** *Cuatrecasas* in Rev. Acad. Col. Cienc. 8, no. 29 (1950) 41, t.1.

COLOMBIA: Comisaria del Vaupés, Mitú and vicinity, savannah at base of Cerro de Mitú. September 27–October 20, 1966. *Schultes, Raffauf et Soejarto 24213.*—Urania. Same date. *Schultes, Raffauf et Soejarto 24321.*

This variety is alkaloid-negative with a Dragendorff spot test.

Clusia Gaudichaudii *Choisy ex Planchon et Triana* in Ann. Sci. Nat., ser. 4 13 (1860) 331.

COLOMBIA: Estado do Amazonas, Rio Negro, Tapurucuara. September 26–October 9, 1947. *Schultes et López 8910.*—Same locality and date. "Strangler epiphyte. Flowers dark red." *Schultes et López 8926.*

The juice of the crushed leaves is applied to the gums to relieve toothache among the inhabitants of the middle course of the Rio Negro of Brazil, where the plant is called *apuí*.

Clusia globosa *Maguire ex R. E. Schultes* in Bot. Mus. Leafl., Harvard Univ. 15 (1951) 60.

COLOMBIA: Comisaria del Amazonas, Trapecio Amazónico, Río Boiauassú, November 1945. *Schultes 6790*. Rio Amazonas, vicinity of Leticia. August 29–September 12, 1966. *Schultes, Raffauf et Soejarto 24009*. — Same locality and date. *Schultes, Raffauf et Soejarto 24109*.

A spot test with Dragendorff reagent was alkaloid-negative for *Schultes, Raffauf et Soejarto 24009*, doubtfully positive for *24109*.

Clusia insignis *Martius*, Nov. Gen. et Sp. 3 (1829–32) 164, t. 288.

COLOMBIA: Comisaria del Vaupés, Río Negro, opposite Piedra del Cocuí. "Enormous tree, 75 feet tall, 18 inches in diameter, columnar. Wood reddish towards centre, yellow-white nearer surface, very hard. Leaves thick. Flowers extraordinarily showy, purple-red, 5 inches across, smelling like rancid butter. In caatinga." December 17, 1947. *Schultes et López 9520*. — Río Vaupés, summit of Cerro Mitú. September 27–October 20, 1966. *Schultes, Raffauf et Soejarto 24343*.

The curious odour of the flowers notwithstanding, the natives of the upper Río Negro of Colombia value the resin of the plant for treating toothache.

Clusia Lopezii *Maguire ex R. E. Schultes* in Bot. Mus., Leafl., Harvard Univ. 15 (1951) 61.

COLOMBIA: Comisaria del Vaupés, Río Negro at confluence of Ríos Guainia and Casiquiare, Caño Ducuruapo (Igarapé Rana). December 13–17, 1947. *Schultes et López 9388*. — Río Negro, vicinity of Piedra del Cocuí. December 17, 1947. *Schultes et López 9473*. — Río Kuduyarí, Yapobodá. October 24, 1951. *Schultes et Cabrera 14198c*.

The resinous exudate of *Clusia Lopezii* is applied to deep dental caries to relieve toothache.

Clusia microstemon *Planchon et Triana* in Ann. Sci. Nat., ser. 4, 13 (1860) 331.

COLOMBIA: Comisaria del Amazonas, Río Igaraparaná, La Chorrera. June 4–10, 1942. *Schultes 3975*. Río Amazonas, vicinity of Leticia. August 29–September 12, 1966. *Schultes, Raffauf et Soejarto 24014*.

Comisaria del Vaupés, Río Apaporis, Raudal Yayacopi. "Epiphyte. Flowers white, purple centrally. Latex thin, white." August 18, 1952. *Schultes et Cabrera 16954.*—Río Vaupés, Mitú and vicinity. September 27–October 20, 1966. *Schultes, Raffauf et Soejarto 24295.*—Same locality and date. *Schultes, Raffauf et Soejarto 24306.*

The Witoto Indians of the Río Igaraparaná value the thin latex of *Clusia microstemon* to deaden toothache: it is applied to the tooth and gums with the finger. The Makunas of the Río Apaporis rub the crushed leaves on muscular sprains, stating that the "heat from the leaves" relieves pain.

The collections *Schultes, Raffauf et Soejarto 24295* and *24306* are alkaloid-negative with a Dragendorff reagent spot-test.

Clusia opaca *Maguire ex R. E. Schultes* in Bot. Mus. Leafl., Harvard Univ. 15 (1951) 62.

COLOMBIA: Comisaria del Vaupés, Río Kananarí, Cerro Isibukuri. "Six feet tall." October 29, 1951. *Schultes et Cabrera 14503.*—Same locality. "Bush 9 feet tall. Fruit reddening when ripe. Latex colourless. Common on summit." December 4, 1951. *Schultes et Cabrera 14733.*—Same locality. "Three feet tall. Latex colourless, coagulating yellow." January 23–25, 1952. *Schultes et Cabrera 15049.*

These collections are the first records of *Clusia opaca* for the flora of Colombia.

The resinous bark of *Clusia opaca* is dried in the sun by the Taiwano Indians and pulverized; mixed with oil from the palm *Jessenia Bataua,* it is applied to sprains and aching joints.

Clusia penduliflora *Engler ex Martius,* Fl. Bras. 12, pt. 1 (1888) 412, t. 84, fig. 2.

COLOMBIA: Comisaria del Vaupés, Río Macaya, near Cachivera del Diablo. Alt. c. 300 m. "Vine. Fruits red." May 1943. *Schultes 5521.*

The Karijona Indians crush the leaves of this species of *Clusia* to poultice on open cracks and sores of the feet which seem to be of fungal origin.

Clusia Planchoniana *Engler ex Martius,* Fl. Bras. 12, pt. 1 (1888) pl. 93, fig. 1.

COLOMBIA: Comisaria del Vaupés, Río Guainía, Puerto Colombia, opposite Maroa. "Large bush. Flowers white outside, dark red inside. Latex colourless." October 31–November 2, 1952. *Schultes, Baker et Cabrera 17938.*

The resin of this large bush is applied to the gums to relieve toothache among the Kuripako Indians of the Río Guainía.

Clusia renggerioides *Planchon et Triana* in Ann. Sci. Nat., ser. 4, 13 (1860) 350.

COLOMBIA: Comisaria del Amazonas, La Chorrera, Río Igaraparaná. "Strangler. Petals red-purple." June 4–10, 1942. *Schultes 3940.* Comisaria del Vaupés, Cerro La Campana, Río Ajaju. June 1–6, 1943. *Schultes 5565.*—Río Piraparaná, Caño Teemeeña. September 6, 1942. *Schultes et Cabrera 171244.*

An infusion of the flowers of *Clusia renggerioides* is valued among the Witotos of the Río Igaraparaná as an antidysenteric.

Clusia Schultesii *Maguire et R. E. Schultes* in Bot. Mus. Leafl. Harvard Univ. 15 (1951) 65.

COLOMBIA: Comisaria del Vaupés, Río Macaya, Cerro Chiribiquete. July 24, 1943. *Schultes 5621.*—Same locality. May 15–16, 1943. *Schultes 5475.*

The Indians of the upper Vaupés believe that the crushed leaves of *Clusia Schultesii,* when poulticed on sores of the feet, hasten healing.

Clusia spathulaefolia *Engler ex Martius,* Fl. Bras. 12, pt. 1 (1888) 412.

COLOMBIA: Comisaria del Vaupés, Río Vaupés, Cerro Circasia. "Scandent shrub. Fruit in pendant clusters." March 7, 1944. *Schultes 5847.*—Río Apaporis, Cachivera de Jirijirimo. Tree 20 feet. Trunk 4–5 inches. Leaves coriaceous, revolute, pale yellow-green beneath. Fruit clustered, reddening. Latex slightly yellow." June 11, 1951. *Schultes et Cabrera 12364.*—Same locality. June 13, 1951, *Schultes et Cabrera 12466, 12468, 12472.*—Same locality. "In low forest, highland, sandy soil. Tree 6 m. Latex white, abundant." July 5, 1951. *Schultes et Cabrera 12938, 12939.*—Same locality. "Savannah. Bush 3 m. high. Latex white, sparse." July 7, 1951. *Schultes et Cabrera 12948.*—Río Vaupés, base of Cerro Mitú. "Tree 30 feet. Fruit light green." *Schultes, Raffauf et Soejarto 24206.*

The Taiwano Indians call this tree *e-ree'-ka.* They consider the dried powdered bark mixed with fariña to be an effective vermifuge.

The collection *Schultes, Raffauf et Soejarto 24206* was alkaloid-negative with a Dragendorff reagent spot-test.

Haveteopsis flexilis *Planchon et Triana* in Ann. Sci. Nat., ser. 4, 14 (1860) 246.

COLOMBIA: Comisaria del Vaupés, Río Negro, Caño Ducuruapo (Igarapé Rana). "Bush. Flowers reddish." December 13–17, 1947. *Schultes et López 9350.*

In the upper Río Negro area, the crushed leaves of this bush are poulticed on the feet of those suffering from severely cracked skin. The treatment, over a period of several days, is said to soften the hardened skin and hasten the healing of the open areas.

Marila tomentosa *Poeppig et Endlicher*, Nov. Gen. et Sp. 3 (1840) 15.

COLOMBIA: Comisaria del Putumayo, Mocoa and vicinity. Alt. 750–850 m. December 3–7, 1942. *Schultes and Smith 3014.*

A warm decoction of the root of *Marila tomentosa* is considered to be an excellent treatment for dysentery among the Siona Indians of the region of Mocoa.

Oedematopus *aff.* **O. duidae** *Gleason* in Bull. Torr. Bot. Club 58 (1931) 406.

COLOMBIA: Comisaria del Vaupés, Río Macaya, Cerro Chiribiquete. "Bush extensive and scraggly, 8–10 feet tall. Trunk stout, latex weak, white. Fruit green. On dry, hot exposures." May 15–16, 1943. *Schultes 5462.*—Same locality and date. "Latex white. Scraggly bush. Fruit green." *Schultes 5480.*

Among the Karijona Indians of the uppermost Río Vaupés, this species has the reputation of being the strongest vermifuge available. Long trips are made to the Cerro Chiribiquete and elsewhere to obtain the dried leaves and bark.

Oedematopus obovatus *Spruce ex Planchon et Triana* in Ann. Sc. Nat., ser. 4, 14 (1860) 250.

COLOMBIA: Comisaria del Vaupés, Río Macaya, Cachivera del Diablo. May 1943. *Schultes 5515.*—Río Negro at confluence of Ríos Guainía and Casiquiare, Caño Ducuruapo (Igarapé Rana). December 13–17, 1947. *Schultes et López 9350.*

The leaves and bark of *Oedematopus obovatus* are valued among the natives of the upper Apaporis River basin as a strong vermifuge.

Oedematopus octandrus *(P. et E.) Planchon et Triana* in Ann. Sci. Nat., ser. 4, 14 (1860) 250.

COLOMBIA: Comisaria del Vaupés, Río Taraira, second rapids upstream. "Small tree. Flowers pink. Latex yellow." July 8–11, 1948. *Schultes et López 10201.*

The Makú Indians who frequently wander through the forests of the uppermost Río Taraira state that the flowers of this tree are employed as a contraceptive agent.

Quapoya peruviana *(P. et E.) O. Kuntze,* Rev. Gen. (1891) 61.

COLOMBIA: Comisaria del Amazonas, Trapécio Amazónico. "Flowers yellow." October 1945. *Schultes 6762.*

The Tikunas assert that the crushed roots of *Quapoya peruviana* were formerly employed as a minor fish poison.

Tovomita aff. **T. laurina** *Planchon et Triana* in Ann. Sci. Nat., ser. 4, 14 (1860) 282.

BRAZIL: Estado do Amazonas, Río Dimití, at base of Serra Dimití. May 12–19, 1948. *Schultes and López 10012.*

In the Colombian part of the uppermost Río Negro basin, a tea of the flowers of this species is believed to be helpful in controlling diarrhoea. A similar use is reported for *Tovomita brasiliensis* (Mart.) Walper in the Brazilian Amazonia.

Vismia angusta *Miquel* in Linnaea 18 (1844) 27.

COLOMBIA: Comisaria del Amazonas, Río Amazonas, vicinity of Leticia. August 29–September 12, 1966. *Schultes, Raffauf et Soejarto 24008.*—Same locality. January 21, 1968. *G. Stout 16, 28.*—Same locality. January 28–February 7, 1969. *Plowman, Lockwood, Kennedy et Schultes 2292.*—Same locality. March 6, 1975. *Zarucchi 1081.*—Río Loretoyacú. January 28–February 7, 1969. *Plowman, Lockwood, Kennedy et Schultes 2372.*

This tree is called by the Spanish name *pichirina* and the Portuguese *lacre* in the Trapecio Amazonico of Colombia.

The use of the yellowish or orange-colored latex is common as a treatment for wounds and infected sores.

The resin of *Schultes, Raffauf et Soejarto 24008* was doubtfully positive for alkaloids with a Dragendorff reagent spot-test.

Vismia ferruginea *Humboldt, Bonpland et Kunth* in Nov. Gen. et Sp. 5 (1821) 183.

BRAZIL: Estado do Amazonas, Manáos, Flores. "Flowers greenish white. Common bush in scrub growth. July 5–August 12, 1967. *Schultes 24594* (R. V. Alpha Helix Amazon Expedition 1967).
COLOMBIA: Comisaria del Putumayo, Río Putumayo above confluence with Río Mocoa. "A treelet 5 m. tall. Bark smooth. Sap colorless, turning deep yellow later. Fruits green. Crushed leaves give sweet smell. *Lacre*. August 6, 1964. *Olday et Hernández*.
PERU: Departamento de Loreto, Iquitos region. June 27, 1966. *Martin et Lau-Cam 1146*.

The resin of this tree is applied to sores and wounds in Brazil. In Peru, where the species is known as *pichirina de hoja menuda*, the "yellow-orange resin is applied like iodine to wounds and carachas."